

Designated Action

Title: Pesticides within the Sacramento-San Joaquin Delta System

Geographic Area: Landscape

Primary Stressor Addressed: Water Quality

Project Type: Research, monitoring

Applicant Type and Name: State.

Funding: The Integration Panel recommends that \$1.5 million be allocated.

Cost Share: None discussed.

Project Description: Water samples collected in the Central Valley and Delta frequently test toxic to *Ceriodaphnia dubia* in the standard U.S. EPA three species bioassay procedure. Toxicity identification evaluations and chemical analysis often implicate the pesticides diazinon and chlorpyrifos as the primary cause of acute *Ceriodaphnia* toxicity, while chemical monitoring and transport studies have confirmed the frequent presence of these two compounds. Sources appear to be from both urban and agricultural applications. Instream concentrations are frequently above National Academy of Sciences, Great Lakes Research Council, and Fish and Game Hazard Assessment Criteria to protect freshwater aquatic life. Values are also above concentrations reported in the literature to be lethal to sensitive aquatic invertebrates including species present in the Central Valley and Delta.

No information is available on impact of pesticides on local invertebrate communities. However, Novartis, the registrant for diazinon, has recently completed a probabilistic risk assessment and concluded that a combination of pesticides causes acutely toxic conditions to 10% of the most sensitive species about 30% of the time in the mainstem San Joaquin River. The study recommends that the population dynamics of susceptible invertebrate species in the basin be evaluated along with the feeding habits and nutritional requirements of common fish species.

The Interagency Ecological Program's Contaminant Effects Group was formed at the request of Agency Directors; its mission is to acquire and disseminate information on the effects of contaminants on aquatic resources in the Central Valley and Estuary. The Integration Panel recommends that the Contaminant Effects Group be requested to develop a study plan with two objectives. The first objective is to determine the ecological impact of pesticides on aquatic invertebrate communities in the mainstem Sacramento River, mainstem San Joaquin River, and Delta. These studies should determine times, locations, and types of organisms (water column/benthic) most at risk, changes in abundance and

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distribution of key invertebrates and time necessary for population recovery. The second objective would be to determine whether changes in available invertebrate food resources affect the growth or survival of any priority fish species.

The study plan will be submitted to the Integration Panel for review. Once a more specific scope of work and funding level is determined, this designated action will be presented to the Ecosystem Roundtable and BDAC for review and comment before submitted to CALFED for review and approval.

ERPP Linkage: This designated action meets the goals of the Ecosystem Restoration Program Plan (CALFED, Volume II, 28 July 1997) as it should reduce loading, concentrations, and bioaccumulation of contaminants of concern to ecosystem health in the water, sediments, and tissues of fish and wildlife in the Sacramento-San Joaquin Delta Ecological Zone by 25 to 50% as measured against current average levels (page 57).